

What is claimed is:

- 1 1. An image processing system operable to perform cross talk correction to a digital image  
2 having a plurality of pixels, comprising:  
3 an image sensor circuitry that is operable to read an image to generate a digital image;  
4 a processing circuitry communicatively coupled to the image sensor circuitry;  
5 a line buffer circuitry, communicatively coupled to the processing circuitry, comprising a  
6 plurality of line buffers;  
7 the processing circuitry performs cross talk correction on a first pixel contained within a  
8 first line comprising a first plurality of pixels to generate a first cross talk corrected pixel, the  
9 first line is received from a first line buffer contained within the line buffer circuitry;  
10 the processing circuitry uses a second pixel contained within a second line comprising a  
11 second plurality of pixels to perform the cross talk correction on the first pixel, the second line is  
12 received from a second line buffer contained within the line buffer circuitry; and  
13 the processing circuitry receives a third line comprising a third plurality of pixels from the  
14 image sensor circuitry.
- 1 2. The image processing system of claim 1, wherein the processing circuitry performs cross  
2 talk correction on a third pixel contained within the third line comprising the third plurality of  
3 pixels after performing cross talk correction on the first pixel.
- 1 3. The image processing system of claim 1, wherein the processing circuitry uses a fourth  
2 pixel contained within a fourth line comprising a fourth plurality of pixels to perform the cross

3 talk correction on the first pixel to generate the first cross talk corrected pixel, the fourth line is  
4 received from a third line buffer contained within the line buffer circuitry; and  
5 a subset of the second line and a subset of the fourth line comprise a cross talk correction  
6 grid within the plurality of pixels.

1 4. The image processing system of claim 1, wherein the first pixel, the second pixel and a  
2 third pixel within the third plurality of pixels are aligned along a predetermined trajectory within  
3 the plurality of pixels of the digital image.

1 5. The image processing system of claim 1, wherein the processing circuitry performs multi-  
2 pass cross talk correction on a fourth pixel contained within a fourth line comprising a fourth  
3 plurality of pixels, the fourth line is received from a fourth line buffer contained within the line  
4 buffer circuitry.

1 6. The image processing system of claim 5, wherein the first pixel, the second pixel, a third  
2 pixel within the third plurality of pixels, and the fourth pixel are aligned along a predetermined  
3 trajectory within the plurality of pixels of the digital image.

1 7. The image processing system of claim 5, wherein the processing circuitry uses the first  
2 cross talk corrected pixel to perform multi-pass cross talk correction on the fourth pixel.

1 8. An image processing system operable to perform cross talk correction to a digital image  
2 having a plurality of pixels, comprising:  
3 a processing circuitry;  
4 a line buffer circuitry communicatively coupled to the processing circuitry;

the processing circuitry performs cross talk correction on a first pixel contained within a first line comprising a first plurality of pixels to generate a first cross talk corrected pixel while the processing circuitry receives a second line comprising a second plurality of pixels from the line buffer circuitry; and

the processing circuitry uses a second pixel contained within the second line comprising the second plurality of pixels to perform the cross talk correction on the first pixel.

9. The image processing system of claim 8, wherein the processing circuitry receives a third line comprising a third plurality of pixels from the line buffer circuitry.

10. The image processing system of claim 8, wherein the line buffer circuitry comprises a line buffer; and

the second line comprising the second plurality of pixels is contained within the line buffer.

11. The image processing system of claim 8, wherein the processing circuitry performs cross talk correction on the first pixel contained within the first line comprising the first plurality of pixels while the processing circuitry performs multi-pass cross talk correction on a third pixel contained within a third line comprising a third plurality of pixels while the processing circuitry receives the second line comprising the second plurality of pixels from the line buffer circuitry; and

the first pixel and the third pixel are aligned along a predetermined trajectory within the plurality of pixels of the digital image.

1 12. The image processing system of claim 11, wherein a subset of the first line and a subset  
2 of the third line comprise a cross talk correction grid within the plurality of pixels.

1 13. The image processing system of claim 11, wherein the processing circuitry uses the first  
2 cross talk corrected pixel to perform multi-pass cross talk correction on the third pixel.

1 14. The image processing system of claim 8, wherein the processing circuitry uses a third  
2 pixel contained within a third line comprising a third plurality of pixels to perform the cross talk  
3 correction on the first pixel.

1 15. The image processing system of claim 14, wherein the line buffer circuitry comprises a  
2 first line buffer and a second line buffer;  
3 the second line comprising the second plurality of pixels is contained within the first line  
4 buffer; and  
5 the third line comprising a third plurality of pixels is contained within the second line  
6 buffer.

1 16. A method to perform cross talk correction to a digital image having a plurality of pixels,  
2 comprising:

3 performing cross talk correction on a first pixel contained within a first line comprising a  
4 first plurality of pixels to generate a first cross talk corrected pixel;

5 receiving a second line comprising a second plurality of pixels while performing the cross  
6 talk correction on the first pixel; and

7 using a second pixel contained within the second line comprising the second plurality of  
8 pixels to perform the cross talk correction on the first pixel.

1 17. The method of claim 16, further comprising using a third pixel contained within a third  
2 line comprising a third plurality of pixels to perform the cross talk correction on the first pixel to  
3 generate the first cross talk corrected pixel; and

4 a subset of the second line and a subset of the third line comprise a cross talk correction  
5 grid within the plurality of pixels.

1 18. The method of claim 16, further comprising performing multi-pass cross talk correction  
2 on a third pixel contained within a third line comprising a third plurality of pixels using the first  
3 cross talk corrected pixel.

1 19. The method of claim 16, further comprising storing the first cross talk corrected pixel in a  
2 memory location.

1 20. The method of claim 16, wherein the first pixel and the second pixel are aligned along a  
2 predetermined trajectory within the plurality of pixels of the digital image.